RFDESIGN

RFD Modem Tools

User Manual

Configuration and usage guide

RFDESIGN

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1   Introduction

The modem tools offer a graphical interface to allow users to manage the settings of RF Design modems including the original 900, + series and x series. Connection to the modem can be established using both the FTDI serial cable or a TCP link in the RFD TX module. This interface can be used to manage the main functions and settings of RF Design modems.

Note: That setting in Multipoint and Asynchronous firmware are not fully supported and it is still recommended to use the AT commands when working with these firmware versions

2   Layout and Function
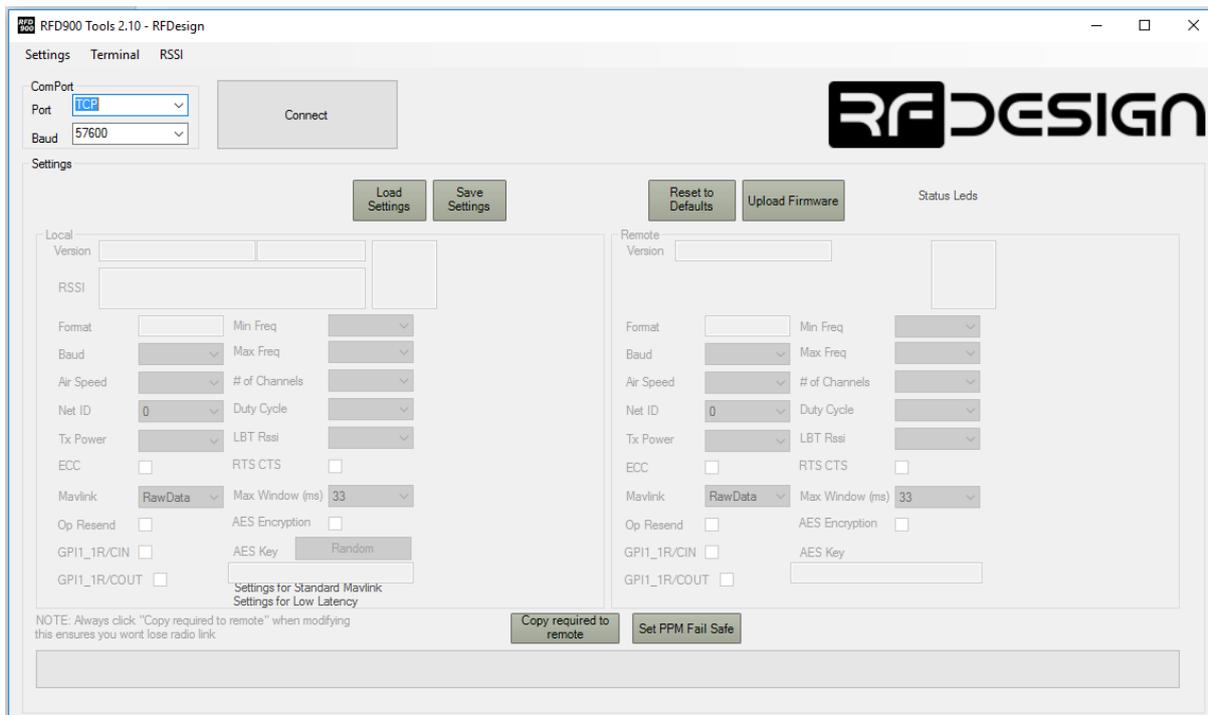
Figure 2-1 RF Design Tools Settings Screenshot

Beside the large "Connect" button are the settings for the port connection. You can choose to connect via a TCP or COM port. The drop-down list of ports will be automatically update as new ports become available. The baud rate is settable via the second drop-down box. Then press the "connect" button which will change to "disconnect" which will allow you to disconnect and change settings before connecting again.

In the top left there are three buttons that lead to the different tools panels.

Settings:

This mode lets the user change the major settings of the modem through a graphical interface. The exact settings that will be available to modify will depend on the series of modem that has been connected and the firmware installed on the modem. The remote settings are only applicable if the modem has established a link with another modem. For the details on the meaning of the individual settings please consult the user manual appropriate to the firmware in use.

The first row of buttons in the settings panel are explored below.

"Load Settings" will attempt to pull the current settings from the modem and if linked the settings of the remote unit. These settings will then be loaded into the local and remote windows below. To enable the option to change modem settings you must first load the current settings from the system.

"Save Settings" will attempt to apply any changes that you have made to the remote and local modems respectively.

"Reset to Defaults" will attempt to reset the modems to the factory defaults.

"Upload Firmware" will attempt to put the modem into bootloader mode. If this succeeds the modem LED will go solid red and a prompt box will open to allow the user to select the firmware to upload. The grey bar at the bottom of the tools window will turn in to a green progress bar and when it reaches the end the modem should reboot without the solid red LED.

The lower row of buttons in the settings panel are explored below.

"Copy required to remote" if the user has a linked pair of modems they can set parameters on the local side then, by pressing this button, the required settings to maintain the link are copied to the remote modem.

"Set PPM Failsafe" allows the user to record the default PPM stream on the RC out modem when using the PPM pass through.
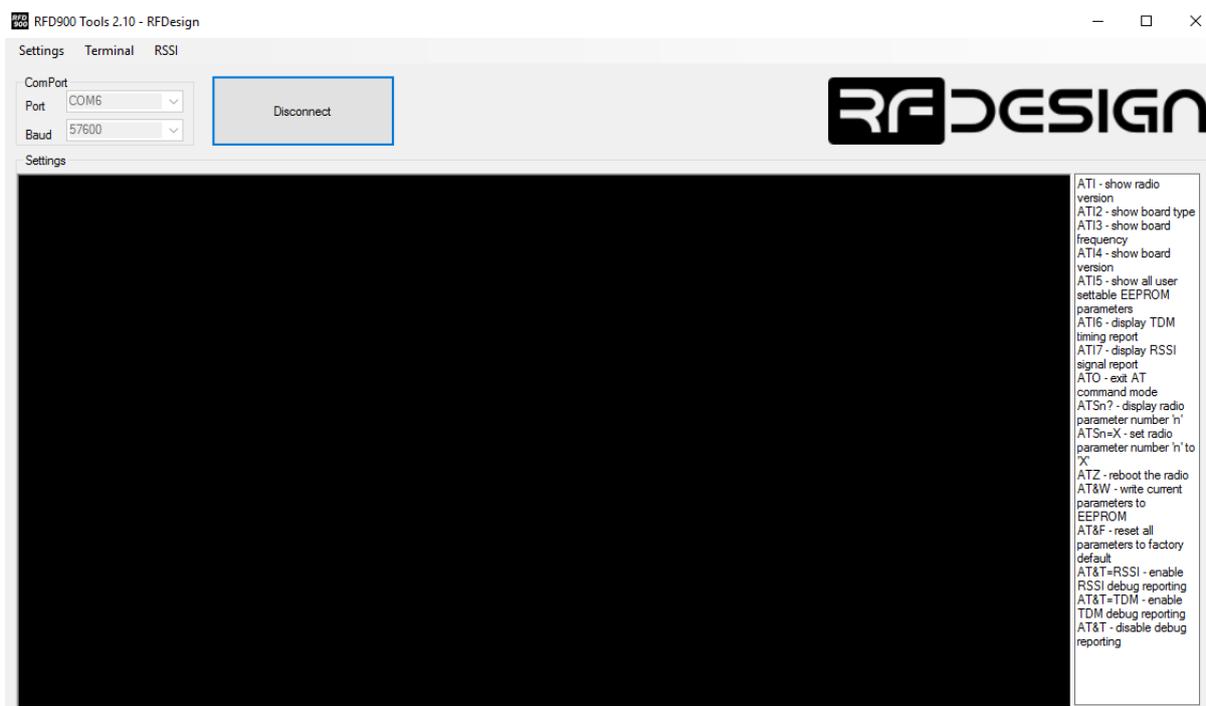
Figure 2-2 RF Design Tools Terminal Screenshot

Terminal:

This mode allows the user to connect to the modem through a terminal allowing settings to be modified with AT commands. Some of the basic commands are shown to the right of the terminal. The commands for modem settings can be found in the user manual appropriate to the firmware in use
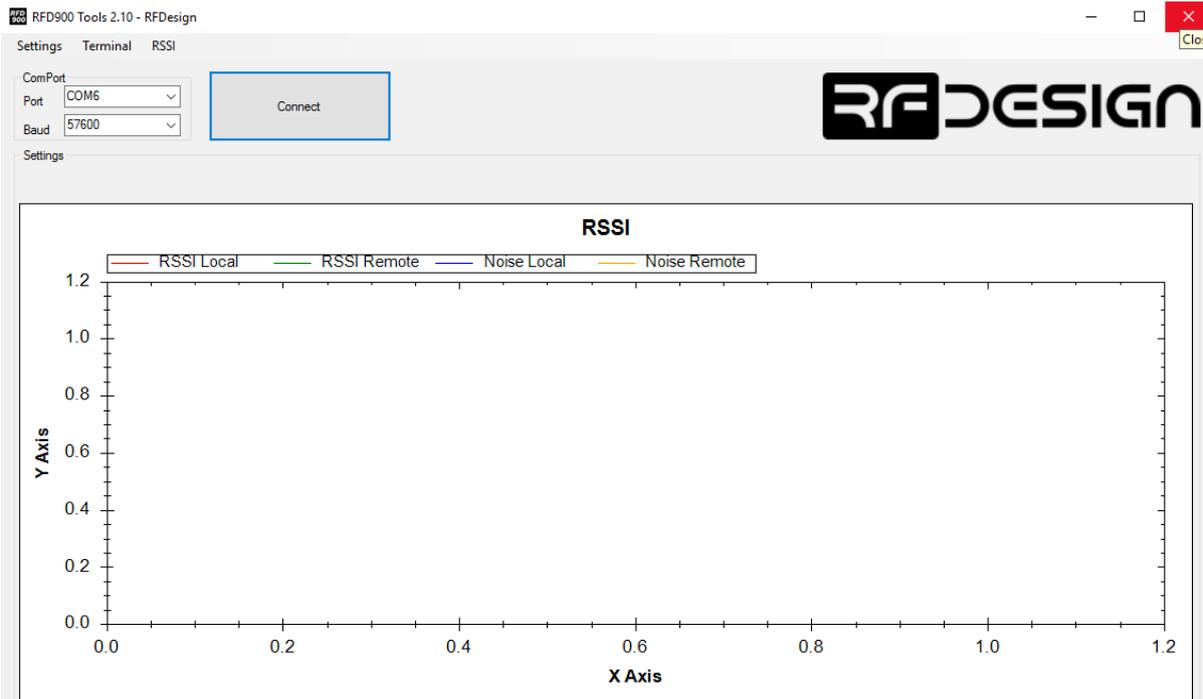
Figure 2-1 RF Design Tools RSSI Screenshot

RSSI:

This mode lets the user monitor the RSSI values of the link. This tool can be helpful in diagnosing link condition.

3   Connecting to the modem

When using the FTDI cable to connect to the modem through a COM port it requires that the cable be connected with the black wire of the FTDI (pin 1) connect to pin 1 on the modem as shown in Figure 3-1.
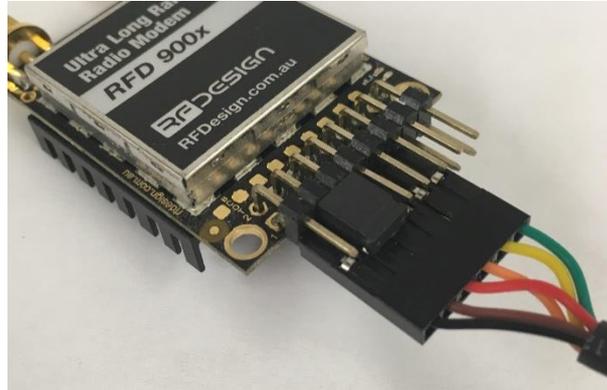
Figure 3-1: An FTDI cable connected to the RFD900x modem

For the specifics of connecting to the modem through the TX module please see the module user manual. In general, the TCP connecting is established by connecting to the appropriate wireless network then selecting TCP from the 'Port' box on the settings page and then selecting the required data rate. When 'Connect' is pressed the user will be prompted to enter the IP and port number to establish the link.

4   Frequently asked questions (FAQ)

1.1   The Tools fail to connect to my modem.

Check that the Cable is connected correctly to the modem and that it is registering a COM port in the device manager. Make sure that the selected COM port is the correct one and that you are using the required baud rate. Ensure that the port is not in use with some other programme such as a terminal or Mission Planner.

1.2   The Tools fail to set boot loader mode.

It is possible for the user to manually force the boot loader. To do this for 900, 900+ and 868+ modems the CTS line must be shorted to ground during power up. This can be done by shorting the first pad (in front of pin one, between the pin header and the shield) to the second pad or the shield of the modem as it is powered up. The 900x and 868x the final pad (in front of pin sixteen, between the pin header and the shield) is shorted to the shield during power up. The red LED on the modem will turn on and remain solid if the unit is in boot loader mode.

1.3   The Tools do not allow me to set some options.

The Tools will restrict the available options based on commonly needed settings for the type of modem and firmware detected. If advanced settings are required or your firmware is not fully supported you will be required to use the AT commands via the terminal to make your settings.

5   Useful links

RFD Modem Firmware

http://rfdesign.com.au/firmware/

FTDI Cable documentation

http://www.ftdichip.com/Support/Documents/DataSheets/Cables/DS_TTL-232R_CABLES.pdf

Last update 22/09/2017

6   Document revision history

Version	Date	Changes
1.0	15/09/17	Release document
1.1	13/07/18	Updated to reflect version 2.10 of the RFDTools